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ABSTRACT

The modern educator works in a society threatened by several potential revolutions and torn by the conflict between the philosophies of materialism and humanism. In this situation the data processor has a unique opportunity to contribute to educational efficiency and to human harmony, provided he adopts certain premises and procedures. Regarding the former, the student and the full range of his individual human needs must remain the central concern of the entire educational effort, despite increases in subject matter content and external pressures of all sorts. With respect to the latter, the data processing specialist should involve the whole spectrum of users in the design, evaluation, modification and operation of computer systems. The resulting systems can then be built so as to preserve the identity of individuals, to remain under the control of and accountable to proper authorities, and to promote the development of mutually beneficial partnerships among all those involved in education. (PB)

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HUMANIZING THE DATA PROCESSOR AND HIS COMPUTER

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INTRODUCTION

My intentions are to express to you, who are the most knowledgeable people in the data processing field, some of the reactions of a superintendent of schools to the use of computer services. My remarks will be generalized and in some instances specific. They will not be technical, for you are the experts.

It is my pleasure to participate in the 1973 AEDS Convention. After 37 years of service in the public schools with 27 years in the DeKalb County School System, I trust that I amy speak with some degree of understanding of problems which beset teachers, custodial, maintenance and clerical personnel, supervisory and administrative agents, other service personnel and the data processor.

As a past superintendent of the DeKalb School System it was my opportunity to preside over a system with an enrollment increase from 9,000 pupils to more than 129,000 enrollees, and to expand a budget from 1.2 million dollars to more than 120 million dollars. Under my administration more than 100 elementary and secondary schools were constructed with units of three community colleges. The personnel was increased from approximately 500 employees to over 7,000 employees.

Not entirely were we engulfed in the financing and school housing activities. We found ways and time to expand and improve the instructional and supporting services. One of these was the successful installation of a Honeywell comprehensive computer system, developed by the DeKalb School System and placed in operation in 1967. You see I survived installing the Honeywell computer.

From the vantage point of this experience I felt some degree of confidence in accepting an invitation to participate in this convention.

As a point of departure may we point out several truisms:

1. We are in the throes of several would be revolutions.
2. There is conflict between the disciples of materialism and humanists.
3. Education is involved.
4. The data processor and his computer have a unique opportunity to relate human elements to achieve economy, efficiency, and harmony.

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The situation society faces is typical in the historical perspective. Problems have always existed. The chronicles of previous years and our own observations justify this conclusion. The dimensions of our needs and the time spiral intervals are what give us our most pressing concern.

Stated simply.....more must happen in less time and space than ever before.

The computer is the outstanding example to support this statement. It extends greatly the intellectual capacities in the use of scientific and materialistic formulas of mathematics and sciences, the frontiers of research, and the business controls. It threatens the inefficient and complacent with exposure!

In the time frame when the individual child's needs may be most constructively met, facts may be assembled and information made available to the teacher psychologist, the supervisory personnel, and to the parents. This makes available to a classroom teacher information in time to apply remediation when it will do the most good rather than the several weeks and months delay which existed prior to the computer. There are numerous examples which may be cited:

> The data processor and his computer can put the "electronic finger" on a specific problem for the competent and alert educator by quickly establishing a significant differential in aptitude and achievement. He may identify the symptoms of the potential dropouts. Notification of these symptoms placed with the school social worker in time gives him an opportunity to apply corrective remediation. Horizons which existed in prior days have vanished, and new horizons related to the parameters of knowledge and education are being determined.

While education is affected by the minorities in society with their revolutionary ideas, slogans, and banners, it is involved with a considerable number of in-revolutions of its own. In attempting to analyze and identify common threads of interest, one is baffled.

Why is it that the planners of this convention find it timely to adopt a central theme of "Humanizing Education--Our Goal." I submit that this is largely a natural result of the loss of identity of the pupil in the mass psychology. We are threatened by even more destructive events in our neighborhoods and erosion of the human spirit and productive stamina unless we find a way to reassert the individuality of the person. Each individual must assume a rightful share of the responsibility and accountability for his values and his neighborhood sense of values.

The data processor, if he understands and accepts as his role the responsibility of coordinating and harmonizing the discordant elements, has in the computer the one tool with capacity potential to assemble the facts and present them in a form where a teacher may know better

"John Doe" and thus is able to help him better identify himself. Parents may come to understand their children better. At the same time the harried administrator has a friend to help him secure the information to rationalize issues and for him to make decisions and have some time left to be a human being dealing with other human beings.

Under the American System and the commitment we have as educators, failure is an individual matter and the data processor has under his control the device to focus attention on the individual, and to help minimize failure.

The data processor may be the one to help us rediscover humanity. This is the era of fads, extravagant expressions, false hopes, reorganization in response to public unrest, and more attention to non-student oriented activities. With all this we wonder why the public is disillusioned with schools. In truth we have kindled the American dream in the minds of all Americans regardless of wealth and poverty and irrespective of where they live. We have attempted to make this dream a reality by producing more goods. In the process research, energy transformation, mass assembly, and management structure have submerged the individual. He feels without identity. He lives in isolation but more congested in housing patterns in the city than ever before.

Attempts are made to convince the public that educators are failing both the child and the public interest. It is beset by fadists and the clothing in new wordage of the old methodology. Organizational patterns with new descriptive words, gadgets, and devices appear and their proponents get their moment in the news media. Educational leaders and school board members, to gain political and financial support, grind out speeches and news articles and parade more specialized programs and services. Problems continue. Costs soar and the public becomes increasingly disenchanted. We are all familiar with court decisions and racial quotas, and the issue of school busings, the fiscal discrimination which breeds educational discrimination, and the civil rights issue raised by pupils and parents. These are only a few of the observations which may be made.

Many uninformed people make passing judgments on school administrators with about the same degree of validity as the "sidewalk engineers" who, peering through a knot hole of the protective fence, supervise the meticulous construction of a building.

The difference is the "sidewalk engineers" vote to elect the school board members, superintendents and other governmental officials who do make laws and policies. Therefore, they cannot be ignored.

There must be a climate for action. Philosophy, policies and procedures should combine to produce an improved sense of direction and productive procedures for teachers, service personnel, and management.

I offer that there is need not for another appendage like the middle school, but a need for defining the role of the school, the philosophy, and guiding direction. From this sure base management may put together the team effort, including the data processor, to get the job done.

If we are to find our way out of the confusion of claims, counter-claims, conflicts real and imagined, it seems to me that a few simple premises are in order:

1. The child must be in fact the primary concern.
2. There is more to teach and more to learn and the rate of increase of knowledge accelerates.
3. Pressures multiply on the teachers and the administrators.
4. There is the temptation in the magnitude and complexity of education to continue to seek tangents which will further deteriorate the focus on the pupil.

We educators have been eminently successful in producing books, instructional materials, and equipment and a conglomerate of supporting services. The training of teachers, supervisors, and principals has improved. By quantitative and qualitative standards education is a successful enterprise.

Human interaction plagues data processors and administrators! While technological problems are plentiful they may be solved by technically competent people. Problems of individuals are more difficult, for they are affected by the quality and comprehensiveness of the operation and the procedures and at the same time by prejudices instilled by former knowledge and experiences. No matter how efficient the performance of equipment and processor there is failure unless there is an understanding and acceptance!

May we turn to some of the procedures in a systems approach? Please recall we have spoken already of a "mental readiness" which is a result of the guiding philosophy of the school system.

Foremost in humanizing the role of the computer in the school operation is the need to involve the user in the development of the system. Few users I know are ready to accept an imposition of service even if it would be helpful.

If I were to select the underlying factor which makes the greatest contribution to the successful implementation of a compatible student accounting system and to inventory, financial, instructional and the other functions, it would be user involvement, not limited only to the design level but in terms of continuing evaluation and refinement. The system must be designed relative to philosophy, policies, and purposes as the hub and from the bottom up, not imposed from the top down.

Where secretaries, teachers, service personnel, principals, supervisors, and top level administrators are jointly involved at both the initial design and on-going refinement level, understandings

are developed gradually. Consequently, defensiveness and resistance are nipped in the bud and diminish with success of the computer system.

Major emphasis should be placed on the users' involvement at the lowest possible level, but it must be recognized that a hidden danger exists if the top level administrators do not become involved. Without a thorough understanding of a complex data processing system, administrative decisions may be made which result in fragmentation of a systems approach without ever realizing the far reaching implications of the decision.

With fragmentation a system may be destroyed; costs will soar in terms of staffing and equipment and confusion will become apparent. The ability to communicate with a school will be impeded and communication within the system, and with state and federal agencies may well be impossible. Duplication, which is costly in terms of money and time, will appear. Variation within a system level set of procedures are always possible if impatience can be controlled long enough to design an adaptation under the umbrella system. This systems approach allows for growth expansion of the umbrella system rather than to attempt to paste on individual patterns like band-aids. Top level administrators must be knowledgeable enough to interpret to all personnel the philosophy and purposes to support this systems approach, to prevent fragmentation, and to protect the integrity of the data processing system through internal discipline!

The on-going success of any management function depends upon production and the discipline. Each unit within the school system must function as a part of the whole without the right to secede from the whole. This does not imply inflexibility; rather there does exist in a systems approach unlimited freedom and flexibility needed for innovation, adjustment, correction, and expansion.

The data processor belongs in the top echelon of the management team. He belongs in the family of teachers, librarians, and supervisors. He also belongs with the superintendent and his associates. It is indeed a promising field where the computer is used by the management to free the teacher and other professional and service personnel of the tedious and time consuming clerical tasks of pupil accounting, scheduling, and recordkeeping, and other routine chores.

The data processor should receive the recognition as the number one teacher aide. In freeing the teacher of many tasks he is providing time and energy for more individualized instruction of pupils and students. This in itself is a humanizing aspect of the computer technology. The computer has a glamorized appeal to the teacher and her helpers confronted with the ever widening horizons of intellectual curiosity and research and the pyramiding of new knowledge.

We find in the business realm that the mass production technology of the assembly lines is being questioned on points of efficiency

and is being reexamined. The inter-personal behavioral patterns of the worker, the supervisor, the administrator, and the top management of the great corporations are undergoing reevaluation. Most of the innovative thinking which relates to behavioral patterns for organizations is developing in the business sector rather than in the schools, which have the primary responsibility for developing the attitudes and behavioral patterns.

School Board members, the superintendent, and the public they represent have a role in developing and maintaining the building processes and attitudes and a sense of direction. Education as an enterprise is an integral part of the local, state, and national fabric. It is perhaps the most discussed topic of today. It is charged with a myriad of shortcomings and often is the scapegoat for the politician who wishes to excuse himself.

On this stage the processor and his computer should emerge into a role which is productive, constructive, and humanizing. Of course it is equally obvious that the computer improperly used by a pragmatic materialist may have a more revolutionizing and dehumanizing impact than any device perfected to this date.

In school management some of the values which deserve consideration in devising evaluation standards are accountability, identity, partnership, computer, inservice education, data processor, and direction.

ACCOUNTABILITY

Education and health and welfare services have been pronounced inflationary. Congressional appropriations have been vetoed. Psychologists who have not advanced much beyond the primitive stimuli findings of 1880, have called for accountability in terms of performance contracting and mechanizing of instructional methods. Politicians have joined them as allies, and laws have been passed. School Boards have been besieged by the demands that teacher and supporting personnel competencies 'and performances' be measured by fixed standards.

It is the limits of accountability expressed in a narrow perspective which should give the educators concern.

The learnings which develop self-confidence, integrity, ability to work with others, feeling for family and country, and the ability to analyze and solve problems will enable students to function in any environment. How man learns to adapt to the constraints of his environment is as important as what he learns.

Under a concept of accountability for the whole individual child the data processor with his computer can become the most humanizing influence available to the educator.

If he permits himself and his computer to be used in a restrictive version of accountability he is limiting his value to boys and girls, young people, and adults. The data processor must be an innovator and interpreter and a promoter of the theory of accountability for the whole child.

IDENTITY

The vitality of the American System including private enterprise, government, and education is based on the theory of individualism. In the Industrial Revolution the continuing socio-economic-political-cultural changes not only are pyramiding but are accelerating in the time spiral. The individual has exchanged for greater material comforts more and more of his individualism and today we are finding out the problems of loss of his identity.

Education, in an attempt to fulfill the great commission to educate all the children of all the people, has been overwhelmed by the mass psychology. While we have continued to profess allegiance to the indvidual child we have been guilty of losing the individual child and to justify our performance in terms of averages and in terms of the generally accepted materialistic standards of business and industry.

The data processor and his computer should be the agents to reestablish the identity of the individual pupil, employee, parent, and citizen!

They may be used not only by the educators but by the officials of the commercial and industrial managements to do the same in their business operations.

PARTNERSHIP

How many times do we build for our data processing people an ivory castle, only to see them retreat into it and triumphantly emerge months later with a newly programmed application? How many times have we all heard that the data processing group is being "dictatorial" and "we must do so and so because of the computer"?

In order for the computer to serve the entire system successfully, coordination in the development and implementation stages are mandatory. Everybody "has to have a piece of the action." It is this partnership of communication between the user and the data processor that guards against data processing dictatorship. When you have the comprehensive involvement of teachers, counselors, principals, secretaries, system level administrators, yes, and even the Superintendent of Schools, the data processing development is in the hands of the most capable professionals within the organization.

The data processor belongs in the forefront of this partnership.

COMPUTER

Much is accomplished these days by pressing a button, pulling a lever and stepping on the gas. Pressing a button may start an automatic production line, select items from a stock room, transmit production facts to a central data processing system, or prepare a payroll.

The electronic computer, so it has been said, can think, remember, choose, calculate fantastic sums, predict elections and even correct its own errors; but in spite of the machine's ability to perform these functions, it still takes a man to construct it, to program it and to control it.

A computer is not even conscious of its own nature. It does not know what it is doing. The work, figures, symbols and coded markings which result from pressing the button means nothing to the machine. Strictly speaking, the computer does not think remember, choose, calculate or perform many of the functions it is given credit for doing.

Machines process data; people use machines.

The data processor must give importance to himself and to his associates by properly controlling and using the computer.

INSERVICE EDUCATION

Graduations in the traditional sense have become passé. The knowledge and the changes associated with knowledge in all fields supports this assertion. Nowhere is this more apparent than in the data processing field.

The data processor with other management officials in the school district must provide for a continuing inservice educational program and reorientation to escape fixation of routines and flexibility and future dehumanizing of the educational process.

The data processor must insist upon and prepare and lead in the right type of inservice education of his associates in the data processing unit and the users of his services. The inservice program must include the pupils and the parents and citizens of the community and the top management--not technical but results oriented.

DATA PROCESSOR

The level of the data processor in the administrative structure should give him a role in the administrative decisions involved with the philosophy and policies and the procedures to which he must relate the computer services. Unless this is done the computer cannot be a servant for the total system and may become a costly appendage in one of the divisions of the school organization.

Under a systems approach, unilateral decisions are costly and surprises occur. Life is too short for surprises which can be avoided. If there is a wind blowing at the forest the data processor must be up high enough to see all the trees move.

DIRECTION

In the value standards the humanistic concept must be served by the materialists. It is through the production of goods and services which have resulted from the industrial revolution which has produced the wealth to support the technology. By applying the results of materialism we approach more closely than ever before the goal of meeting the needs of each individual and a standard of comprehensiveness and excellence dictated by the philosophy of humanism.

The data processor should be a militant supporter of the humanistic philosophy.

SUMMARY

We have spoken in this paper of truisms and premises related to humanizing education. We conclude that these statements are applicable to the socio-economic-political-cultural patterns which confront not only the education sector but all sectors of the present. Problems have always beset society and most likely always will. We find the mainspring in the American system and the technology which supports it in the individual. If we are serious in pursuing the theme of this convention, "Humanizing Education--Our Goal", you educators must rediscover the child, industrial leaders the employee, and political leaders the citizen. In this search for individual identity the data processor finds his opportunity to contribute directly to the productivity of the economy and the revitalization of the American system.

I trust, Mr. Chairman, that my statements have stimulated some thinking and members of the audience through questions and comments will make this a constructive session.